Problem 3.26: More Circuit Detective Work

The left terminal pair of a two terminal-pair circuit is attached to a testing circuit. The test source vin (t) equals sin (t) (Figure 3.69).

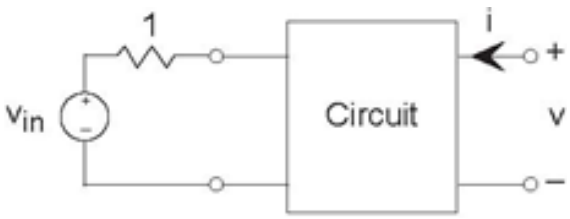

Figure 3.69 More Circuit Detective Work

We make the following measurements.

- With nothing attached to the terminals on the right, the voltage v (t) equals

$$\frac{1}{\sqrt{2}}cos\left(t+\frac{\pi}{4}\right)$$

.

- When a wire is placed across the terminals on the right, the current $i(t)$ was $-(\sin(t))$.

1. What is the impedance "seen" from the terminals on the right?
2. Find the voltage v (t) if a current source is attached to the terminals on the right so that i(t) = sin(t).